



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,390	03/03/2006	Michael Trendelenburg	870206.401USPC	8009
500 7590 10/17/2007 SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 5400 SEATTLE, WA 98104			EXAMINER FUJITA, KATRINA R	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 10/17/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/522,390	Applicant(s) TRENDELENBURG ET AL.	
	Examiner Katrina Fujita	Art Unit 2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 8-15 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-15 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office Action is responsive to Applicant's remarks received on January 25, 2005. Claims 1-5, 8-15 and 18 remain pending.

### ***Information Disclosure Statement***

2. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been

fully considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

### ***Drawings***

3. Figure 3 is objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 350.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Suggestions***

4. In claim 10, line 2, "location of the plurality of particle" should be changed to -- locations of the plurality of particles --.
5. In claim 13, line 4, "speciment" should be changed to -- specimen --.
6. In claim 13, line 8, and claim 18, line 2, "the particles" should be changed to -- the plurality of particles --.

### ***Claim Objections***

7. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

8. Claims 2, 3, 8-10, 12, 13 and 18 are objected to under 37 CFR 1.75(a), as failing to particularly point out and distinctly claim the subject matter which application regards as his invention or discovery.

Claim 2 lacks antecedent basis for "the acquisition of contrast images" in line 1. The following will be assumed for examination purposes: -- the acquisition of ~~contrast images~~ the at least one image --. Accordingly, claim 3 will be assumed as follows for

Art Unit: 2624

examination purposes: -- wherein the images at least one image are is at least a 14 bit images image --.

Claim 8 lacks antecedent basis for "the images are processed" in line 2. The following will be assumed for examination purposes: -- the images at least one image are is processed --.

Claim 9 lacks antecedent basis for "the images" in line 2. The following will be assumed for examination purposes: -- the images --.

Claim 12 lacks antecedent basis for "the generation" in line 2. The following will be assumed for examination purposes: -- the generation --.

Claim 18 lacks antecedent basis for "the display devices visualize" in line 2. The following will be assumed for examination purposes: -- the display devices device visualize visualizes --.

9. The following is a quotation of 37 CFR 1.75(d)(1):

The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

10. Claim 8 is objected to under 37 CFR 1.75(d)(1), as failing to conform to the invention as set forth in the remainder of the specification.

Claim 8 requires the image to be processed using at least 16 bits. However, the specification is silent about the particular processor used to process the image data.

Thus the specification does not provide "clear support or antecedent basis in the description" for the "image" to be processed "using at least 16 bits".

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1, 4, 5, 8-11, 13, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by McLaren et al. (WO 01/04828).

Regarding **claim 1**, McLaren et al. discloses a method for multiple labeling detection and evaluation of a plurality of particles in specimen analysis ("anti-estrogen receptor antibody labels epithelial cells" at page 35, line 16) comprising the steps of:

i) Acquisition of at least one image in a single color scale (figure 17A, numeral 288);

ii) A separation of the plurality of particles using a color threshold (figure 17A, numeral 294);

iii) Identification and classification of one or more particle types of the plurality of the particles based on the size and shape of the plurality of the particles to form different particle classes (figure 17A, numeral 298); and

iv) Visualization of locations of the plurality of particles ("pathologist can then visually inspect the images to make a determination whether to accept (152) or reject" at page 100, line 8).

Regarding **claim 4**, McLaren et al. discloses a method wherein the separation of the plurality of particles is carried out with reference to an underlying background image ("those less than the threshold are determined to be artifact or background pixels" at page 82, line 16).

Regarding **claim 5**, McLaren et al. discloses a method wherein the separation of the plurality of particles is carried out with reference to specimen structures (figure 17A, numeral 296).

Regarding **claim 8**, McLaren et al. discloses a method wherein the at least one image is processed using at least 16 bits ("processors capable of 8 to 32 bit operation" at page 57, line 7).

Regarding **claim 9**, McLaren et al. discloses a method wherein the image can be a photo-montage of a plurality of images (figure 22).

Regarding **claim 10**, McLaren et al. discloses a method wherein the step of visualization of the locations of the plurality of particles is carried out by a false coloring



of the plurality of particles ("transform the matrix of RGB values to a different color space" at page 84, line 13).

Regarding **claim 11**, McLaren et al. discloses a method wherein different false colors are used for different particle classes ("difference between candidate objects of interest and their background, such as tumor and normal cells, may be determined from their respective colors" at page 84, line 15).

Regarding **claim 13**, McLaren et al. discloses an apparatus for the analysis of particles comprising:

an image capture device for capturing a single color image of a specimen with a plurality of particles (figure 2, numeral 42);

an image enhancement device (portion of figure 2, numeral 25 that performs figure 17A, numerals 290-296);

an image identification and classification device for classifying the plurality of particles based on the size and shape of the plurality of the particles (portion of figure 2, numeral 25 that performs figure 17A, numeral 298); and

a display device for visualizing the specimen with the plurality of particles (figure 2, numeral 27).

Regarding **claim 18**, McLaren et al. discloses an apparatus wherein the display device visualizes the plurality of particles in false colors ("transform the matrix of RGB values to a different color space" at page 84, line 13).

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McLaren et al. and Kinney et al. (US 5,909,276).

McLaren et al. discloses the elements of claim 1 as described in the 102 rejection above.

McLaren et al. does not disclose that the acquisition of the at least one image is made by a slow scan cooled charge couple device camera, wherein the at least one image is at least a 14 bit image.

Kinney et al. teaches a method in the same field of endeavor of particle detection using an imaging system, wherein acquisition of the at least one image is made by a slow scan cooled charge couple device camera ("slow-scan, cooled CCD camera" at col. 4, line 31), wherein the at least one image is at least a 14 bit image ("16-bit TIFF image" at col. 5, line 15).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the SSC CCD camera of Kinney et al. to acquire the images of McLaren et al. as "Cooled CCD cameras have lower dark current" (Kinney et al. at col.

4, line 36) and "Slow-scan CCD cameras have low read-out noise" (Kinney et al. at col. 4, line 43).

15. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McLaren et al. and Erler et al. (US 5,687,251).

McLaren et al. discloses the elements of claim 1 as described in the 102 rejection above.

McLaren et al. does not disclose generation of an overlay image.

Erler et al. teaches a method in the same field of endeavor of image analysis of specimens ("methods to provide preferentially segmented digital images of microscopical specimens" at col. 1, line 11) comprising the generation of an overlay image ("edge overlay is combined with the digital specimen image" at col. 2, line 52).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the overlay image of Erler et al. in the separation step of McLaren et al. to "preferentially segment all objects of interest within a specimen for measurement and analysis" (Erler et al. at col. 2, line 59).

16. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McLaren et al. and Taniguchi (US 5,578,823).

McLaren et al. discloses that the image capture device is a camera connected to a microscope (figure 2, numeral 32).

McLaren et al. does not disclose that the microscope is an electron microscope and that the camera is a slow scan charge coupled device.

Taniguchi teaches an apparatus for the analysis of particles ("transmission electron microscope equipped with an energy filter for spectrally separating only electrons that have specific energy from those transmitted through a specimen" at col. 1, line 10) wherein the image capture device is a camera connected to a electron microscope (figure 1, numeral 1), wherein the camera is a slow scan charge coupled device ("slow-scan CCD camera is employed" at col. 9, line 65).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the SS CCD camera and electron microscope of Taniguchi as the image pickup device and microscope of McLaren et al. "because the slow-scan CCD camera has a greater number of pixels and wider dynamic range" (Taniguchi at col. 9, line 61) and to "make it possible to obtain an element distribution or map image of a minute or fine region" (Taniguchi at col. 1, line 13).

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,546,123 is pertinent as being in the same patent family as McLaren et al. (WO 01/04828) that was used in the above rejections.

Art Unit: 2624

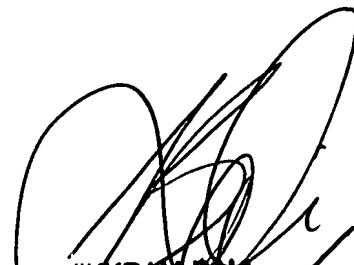
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katrina Fujita whose telephone number is (571) 270-1574. The examiner can normally be reached on M-Th 8-5:30pm, F 8-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KF

Katrina Fujita  
Art Unit 2624



VIKKRAM BALI  
PRIMARY EXAMINER